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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BERMAN, SUSAN W	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/590,263	GUBYCH, IGOR	
	Examiner	Art Unit	
	/Susan W. Berman/	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2-26-07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

3Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3 and 5-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1: the use of the word "type" in "acrylic type" renders the claim indefinite. It is not clear whether applicant intends to claim a water-insoluble acrylic polymer or to claim some other kind of polymer of the same type. The phrase "E comprises one of hydrogen, an alkali metal or an alkali earth metal and Ha comprises halogen" renders the claim indefinite. Does applicant intend to claim that E is hydrogen, an alkali metal or an alkali earth metal or that E is a mixture comprising hydrogen, an alkali metal or an alkali earth metal? If "Ha" comprises halogen, it is not clear what other components Ha comprises. The other components represented by Ha should also be set forth. Alternatively, applicant should define Ha by the phrase "Ha consists of a halogen" or "Ha is selected from halogens".

Claims 1 or 6: The use of the word "general" in "general formula" renders the claim indefinite because it isn't clear whether applicant intends to claim a compound of one of the formulas recited of some other compounds similar to those.

Claim 2: does applicant intend the increasing of temperature to occur only when modification is by heating or also when modification is by irradiation?

Claims 5 and 6 employ improper Markush language in the phrase "from the group comprising…peroxysulphate". The phrase is indefinite because the word "comprising" does not

limit the "group" to the compounds set forth and it is not clear what other compounds might also be present as initiator-modifier compound. The phrases "one of the group comprising", "E comprises…" and "Ha comprises" render claim 6 indefinite for the same reason. The correct Markush phrase is "from the group consisting of at least one… and …".

Claim 7: It is not clear what is meant by "determining the concentration of the initiator-modifier compound according to active oxygen". What is meant by "according to active oxygen"?

Claim 8: It is not clear whether "(by weight)" is intended to be included in the claim since it is not lined through but it is in parentheses.

Claim 13: It is not clear what component in the solution is "less than 10% per weight" or what total weight the percent by weight is based upon.

Claim 16 fails to clearly set forth what kinds of polymer are to be selected. What is meant by "selecting the polymers…as hydrophilic superabsorbents on a base of an acrylic acid"? Does applicant intend to recite "wherein the polymers to be modified are selected from hydrophilic superabsorbent polymers that are copolymers of acrylic acid"? If so, it should be so stated.

Claim 17: It is not clear what total weight the percent by weight of polymer in the reaction mixture is based upon. It is not clear how the "concentration" of the polymer is related to the weight percent.

Claim 20: The phrase "radiation comprising…X-ray radiation" should read "radiation consisting of…and X-ray radiation".

Claim 22: The phrase "E comprises one of hydrogen, an alkali metal or an alkali earth metal and Ha comprises halogen" renders the claim indefinite. Does applicant intend to claim

that E is hydrogen, an alkali metal or an alkali earth metal or that E is a mixture comprising hydrogen, an alkali metal or an alkali earth metal? If "Ha" comprises halogen, it is not clear what other components Ha comprises. The other components represented by Ha should also be set forth. Alternatively, applicant should define Ha by the phrase "Ha consists of a halogen" or "Ha is selected from halogens". The kinds of gel-forming water insoluble polymer added to the solution required to obtain acrylic polymers should be clearly identified.

Claim 24 fails to further limit claim 22 because claim 22 already recites that the product is water soluble high-molecular polymers.

Claim 25: It is not clear how the polymer can comprise a reducing agent. Is the reducing agent bonded to the polymer? Does applicant intend to claim a composition comprising the acrylic polymer and a reducing agent?

Claim 26: The claim employs improper Markush language in the phrase "from the group comprising…peroxysulphate". The phrase is indefinite because the word "comprising" does not limit the "group" to the compounds set forth and it is not clear what other compounds might also be present as initiator-modifier compound. The correct Markush phrase is "from the group consisting of at least one… peroxysulphate".

Claim 27: It is not clear what is meant by "the concentration of the initiator-modifier compound is determined according to active oxygen". What is meant by "according to active oxygen"?

Claim 30: There is no antecedent basis for the "alkaline compound" recited in claim 30 in the text of claim 22.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 22-31 are rejected under 35 U.S.C. 102(b) as being anticipated by or, alternatively, under 35 U.S.C. 103(a) as being unpatentable over Burgert et al (5,629,377). Burgert et al disclose a method for adding a redox catalyst system and a chlorine or bromine containing oxidizing agent in water solution to a polymerized hydrogel resin, such as polyacrylic acid, and heating. See column 7, line 65, to column 9, line 9, column 10, line 17, to column 12, line 26, and Examples 102-103. The difference from the instantly claimed method is that the hydrogel polymer containing oxidizing agent is dried, wherein agglomerates may be formed and subjected to particle reduction, before the final crosslinking heat treatment (column 10, line 61, to column 11, line 28). The product obtained by the method taught by Burgert et al would be expected to produce a product as defined in the claims, in the absence of evidence to the contrary. The reason is that Burgert et al use starting materials and initiators corresponding to those set forth in the instant claim language and similar method steps. It is not clear what the differences in "solution" composition are or what effect amounts of water present would have on the disclosed products compared with the instantly claimed products. With respect to claim 23, Burgert et al do not mention the molefuclar weights of the polymeric products. With respect to claim 29, Burgert et al teach particle sizes preferably 0.8 mm or less (column 11, lines 55-58).

In product by process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102/103 rejection has been made, the burden shifts to the applicant to show an unobvious difference". MPEP 2113. This rejection under 35 U.S.C. 102/103 is proper because the "patentability of a product does not depend on its method of production". *In re Thorpe*, 227 USPQ 964, 96 (Fed. Cir. 1985).

Allowable Subject Matter

Claim 1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 2, 3 and 5-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The closest art known to the examiner is the disclosure of Burgert et al discussed herein above and the disclosure of Song discussed herein below. No motivation to combine the teachings of the references is apparent.

Song (7,205,369, filed 08-12-2003) discloses a method of increasing the molecular weight of cationic polymers by controlled addition of a water-soluble radical initiator to produce high molecular weight crosslinked water-soluble cationic polymers. The cationic polymers are water soluble polymers of diallyldimethylammonium chloride and are said to be very different in structure from acrylate and acrylamide polymers (column 5, lines 8-22). Persulfate compounds and water-soluble peroxide compounds are taught as radical initiators for crosslinking (column 5, lines 23-38). See column 6, lines 29-44. The method is taught from column 6, lines 54-67, column 10, lines 1-39. Polymers from (meth)acrylate monomers are taught in column 7, lines 4-12, and lines 52-60. Example 1 teaches starting with an aqueous solution of polymer, mixing

with a solution of ammonium persulfate, heating and obtaining a water-soluble higher molecular weight polymer free from water-insoluble gel. The disclosed method differs from the instantly claimed method in that the starting material is a water soluble cationic polymer instead of a gel-forming water-insoluble polymer. There is no suggestion that the disclosed method would be useful or effective wherein the starting material is a water-insoluble polymer that forms macro-aggregates in aqueous solution, as set forth in instant claim 1.

Mertens et al (7,285,599) disclose a method for preparing absorbent crosslinked polymers wherein the surfaces of the polymers have been postreticulated. A polymer that absorbs water is prepared and then coated and crosslinked with heating with an organic post-crosslinking agent and a cation of a salt dissolved in aqueous solution. For example, polyacrylic acids are crosslinked with an aqueous solution of aluminum sulfate and 1,3-dioxolan-2-one. The salts can have sulfates, chlorides, bromides as anions and alkali metals or alkali earth metals as cations (column 6, lines 41-56).

EP 0 541 201, cited in the European opinion, discloses compositions comprising a high molecular weight cross-linked polyacrylic acid thickening agent (page 5, lines 14-33). The molecular weights of the polymers are taught on page 4, line 40, to page 5, line 12. EP '201 does not disclose or suggest polymers obtained using initiator-modifier compounds as recited in instant claims 1 and 22.

JP 63230704 discloses water-soluble high molecular weight polymers prepared by aqueous solution polymerization in the presence of a catalyst. The catalyst used is not mentioned in the Abstract.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB
10/2/2008

/Susan W Berman/
Primary Examiner
Art Unit 1796